

**DONNA  
LEE  
SHIRLEY**  
**1941-**



**NASA  
MARS  
ROVER  
DEVELOPER**

Donna Shirley was flying solo in her teens. By 1966, she was beginning a 30-year with NASA at the Jet Propulsion Lab (JPL), working on the first Mars mission and leading the team which developed the Mars Rover that broadcast to Earth in 1997. She has been a role model for women in the field of space exploration.

Donna Lee Shirley was born in 1941 in Pauls Valley and grew up in Wynnewood. Of Chickasaw descent, the family were owners of large land tracts. Her father was the town's physician; her mother the daughter of Methodist minister Dr. Charles Brooks who served on a commission that set Oklahoma school standards at the 1907 Constitutional Convention.

At age ten, Donna was mesmerized by a Collier's magazine article about space pioneer Wernher von Braun. An "unrepentant tomboy", Shirley dodged home economics to take mechanical drawing. When she turned fifteen, her father bought her flying lessons. She earned a pilot's license the next year. During her senior year in high school, she was class vice president, band vice president and valedictorian.

When she started at the University of Oklahoma, her adviser said, "Girls can't be engineers". Donna also studied flying there, obtaining pilot's licenses in single-engine land and sea, multi-engine land, commercial, and flight instructor. At age twenty, she was crowned Miss Wynnewood and competed in the Miss America pageant as Miss Oklahoma. After earning a bachelor's in technical writing in 1963, Shirley went to work as a specification writer and aerodynamicist for McDonnell Aircraft in St. Louis. She returned to OU to complete a bachelor's in aerospace/mechanical engineering degree in 1965.

She went to work for NASA at the Jet Propulsion Lab in Pasadena, California in 1966. She was the only woman among the 2,000 engineers with an engineering degree. She later completed a master's degree in aerospace engineering at the University of Southern California. She was an aerodynamicist assigned to solving the problem of how Mars Landers could come through the atmosphere safely, without burning up or tumbling.

In 1979, Shirley headed a study of a Saturn Orbiter and Probe that led to Cassini, an international mission to Saturn. In the early 1990s, she was Project Engineer for the Cassini Flight Project. In 1992, Shirley was assigned to lead the development of the six-wheeled Mars Rover later known as Sojourner, named after the anti-slavery and women's rights advocate Sojourner Truth. Selected to head the Mars Exploration Program in 1994, Shirley was the first woman to manage a NASA program. Sojourner successfully touched down on Mars on July 4, 1997.

In addition to over fifty technical publications, Shirley wrote her autobiography called "Managing Martians: The Extraordinary Story of a Woman's Lifelong Quest to Get to Mars – and of the Team Behind the Space Robot That Has Captured the Imagination of the World" in 1998.

Shirley officially retired as manager of the Mars Exploration Program in August 1998. After thirty years at JPL, her honors included the NASA Exceptional Leadership Medal, American Society of Mechanical Engineers Holley Award, and membership in the American Academy of Achievement, the Women in Technology International Hall of Fame, and the Oklahoma Aviation and Space Hall of Fame.

She became as Assistant Dean of Engineering at OU for Advanced Program Development in 2000, and was official spokesperson for the Mars Millennium Project. She won the Washington Award (2001), National Space Society's Wernher Von Braun Memorial Award (2001) and was inducted into the Oklahoma Women's Hall of Fame (2003). She then went on to be the founding director of the Science Fiction Museum in Seattle.

In 2004, she became President of Managing Creativity, where she shares her strategies for developing ideas and turning them into products. In October 2016, the OU School of Aerospace & Mechanical Engineering presented Shirley with its Annie Oakley Award for her work in inspiring and advocating for women to work in engineering. She is a well-known educator, speaker, and consultant.